

Contents

Part I General Aspects

Interfacial Behavior of Fluorescent Dyes. Power and Weakness of Nanoscopic Description	3
Alexander P. Demchenko and Semen O. Yesylevskyy	

Part II Probing Condensed Media

Fluorescence Probing of the Physicochemical Characteristics of the Room Temperature Ionic Liquids	65
Anunay Samanta	

Fluorescence Spectroscopy in Polymer Science	91
Tanzeela N. Raja and Albert M. Brouwer	

Fluorescence Probing in Structurally Anisotropic Materials. From Liquid Crystals to Macromolecules, Micelles and Lipid Bilayers	119
Semen O. Yesylevskyy and Alexander P. Demchenko	

Part III Fluorescence Reporters in Biosensing

Optimized Dyes for Protein and Nucleic Acid Detection	161
Sergiy M. Yarmoluk, Vladyslava B. Kovalska, and Kateryna D. Volkova	

Functional Nucleic Acids for Fluorescence-Based Biosensing Applications	201
Jennifer Lee, Lawrence Lin, and Yingfu Li	

Part IV Cell Imaging with Organic Dyes

Covalent Labeling of Biomolecules in Living Cells	225
Tilman Plass and Carsten Schultz	

Tetracysteine and Bipartite Tags for Biarsenical Organic Fluorophores	263
Carla Spagnuolo, María Joselevich, Federico Coluccio Leskow, and Elizabeth A. Jares-Erijman	
Labeling of Oligohistidine-Tagged Proteins	297
Jacob Piehler	
 Part V Tissue and Whole Body Imaging	
In Vivo Imaging of Vascular Targets Using Near-Infrared Fluorescent Probes	313
Jan Klohs and Markus Rudin	
Whole-Body Imaging of Hematopoietic and Cancer Cells Using Near-Infrared Probes	329
Vyacheslav Kalchenko, Michal Neeman, and Alon Harmelin	
Index	347